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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/075,657

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Wei-Zhong Li

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11/01/2005

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EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,657

Applicant(s)

LI, WEI-ZHONG

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-21 is/are allowed.
- 6) ☒ Claim(s) 22-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to an amendment filed 31 January 2005 in which claims 1, 9, 20, 22 and 25 were amended. Claims 1-27 are pending.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 176, 276, 267. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 8, line 12 "and exist port 110" should be --and exit port 100--.

On page 10, line 27 "port 210" should be --port 200--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 22-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Sui, US 6,594,068 B2.

Sui discloses in figs. 8A and 8B an optical component comprising: a first birefringent material (316); a structured half wavelength plate (317t, 317t', 317b, 317b') coupled between the first birefringent material (316) and a second birefringent material (325), the structured half wavelength plate being operable to rotate a polarization of light passing through a first portion (317t', 317b) of the structured half wavelength plate while the polarization of light passing through a second portion (317t, 317b') of the structured half wavelength plate remains substantially unchanged (see fig. 8C and column 5, lines 17-21); and a half wavelength plate (321) coupled between the second birefringent material (325) and a Faraday rotator (320); wherein the structured half wavelength plate (317t, 317t', 317b, 317b') is coupled to the first birefringent material plate (316) through a wedge (315); and wherein the structured half wavelength plate (317t, 317t', 317b, 317b') includes two regions of half wavelength plates (317t', 317b) placed diagonal to each other (fig. 8C) and two regions of transparent plates (317t, 317b') placed diagonal to each other (fig. 8C). Regarding claim 25, when the direction of the

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light is reversed (i.e., from left to right) the first birefringent material is element 325, the structured half wavelength plate is elements 324t, 324t', 324b, 324b', wedge (326), and the Faraday rotator (320) would be coupled between the second birefringent material (316) and a half wavelength plate (321).

Allowable Subject Matter

5. Claims 1-21 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Claims 1-8 are allowable over the prior art for at least the reason that the prior art fails to teach and/or suggest an optical switch including a first and second port, a switching component group and a first and second component group arranged and cooperating in the manner as particularly recited in the claimed combination when the singular polarization switch is enabled or disabled.

Riza, US 6,360,037 B1, discloses an optical switch in figs. 3A and 3B including a first (14a) and second (14b) port, a switching component group (between elements 34) and a first (28, left side) and second component group (28, right side) but does not pass the light beams in the manner claimed when the singular polarization switch is enabled or disabled.

Sui et al. disclose an optical switch in figs. 8A-8D including a first (314) and second (327) port, a switching component group (320) and a first (315-319) and second component group (322-326) but does not pass the light beams in the manner claimed when the singular polarization switch is enabled or disabled.

Claims 9-21 are allowable over the prior art for at least the reason that the prior art fails to teach and/or suggest an optical switch including a first and second port, a switching component group including a reflector; a polarization beam splitter (PBS); and a singular polarization switch and a first and second component group arranged and cooperating in the manner as particularly recited in the claimed combination.

Riza, US 6,360,037 B1, discloses an optical switch in figs. 3A and 3B including a first (14a) and second (14b) port, a reflector (38), PBS (36), a singular polarization switch (34), and a first (28, left side) and second component group (28, right side) but does not provide the light beams in the manner claimed to the switching component group.

Tai et al., US 6,587,266 B2 disclose in fig. 12a an optical system including a first (800) and second (890) port, a reflector (870) and PBS (820), and a first (805, 810, 815) and second (885, 882, 880) component group but does not include a singular polarization switch as claimed.

Hoyt et al., US 2003/0026583 A1 disclose in fig. 1 an optical system with a first (104) and second (108) port, a reflector (130) and a singular polarization switch (120) but does not include a PBS as claimed.

Hou et al., US 6,441,961 B1 disclose in figs. 2E and 2F an optical system with a first (255) and second (257) port, a reflector (270) and a singular polarization switch (260) and a first (252, 253, 254, 256) and second (256) component group but does not include a PBS as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7. Applicant's arguments with respect to claims 22-23 and 25-26 have been considered but are moot in view of the new ground(s) of rejection.

8. After careful review of the claims, it is found that an anticipation rejection is appropriate for claims 24 and 27. The examiner regrets any inconvenience caused by this action.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mao et al., US 6,735,016 B1 and Zalevsky et al., US 2005/0174639 A1 disclose optical switches with structured wave plate systems. Pan, US 6,181,846 B1 discloses and liquid crystal switch and reflector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF
October 24, 2005



MARK A. ROBINSON
PRIMARY EXAMINER